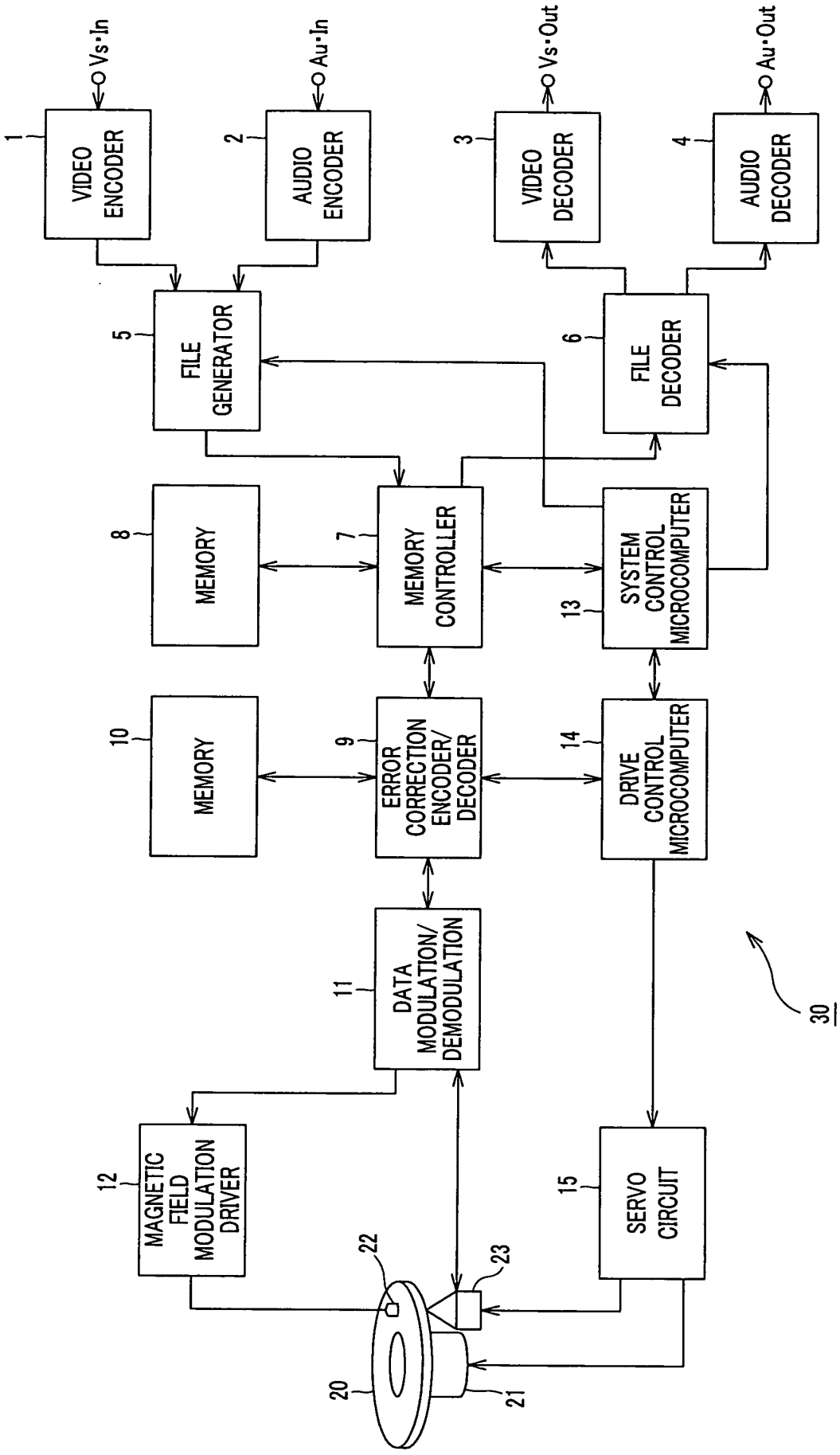

Vs·In
Au·In
Vs·Out
Au·Out
1
VIDEO ENCODER
2
AUDIO ENCODER
3
VIDEO DECODER
4
AUDIO DECODER
5
FILE GENERATOR
6
FILE DECODER
8
MEMORY
7
MEMORY CONTROLLER
13
SYSTEM CONTROL MICROCOMPUTER
10
MEMORY
9
ERROR CORRECTION ENCODER/ DECODER
14
DRIVE CONTROL MICROCOMPUTER
11
DATA MODULATION/ DEMODULATION
12
MAGNETIC FIELD MODULATION DRIVER
15
SERVO CIRCUIT
22
23
20
21
30

FIG.1

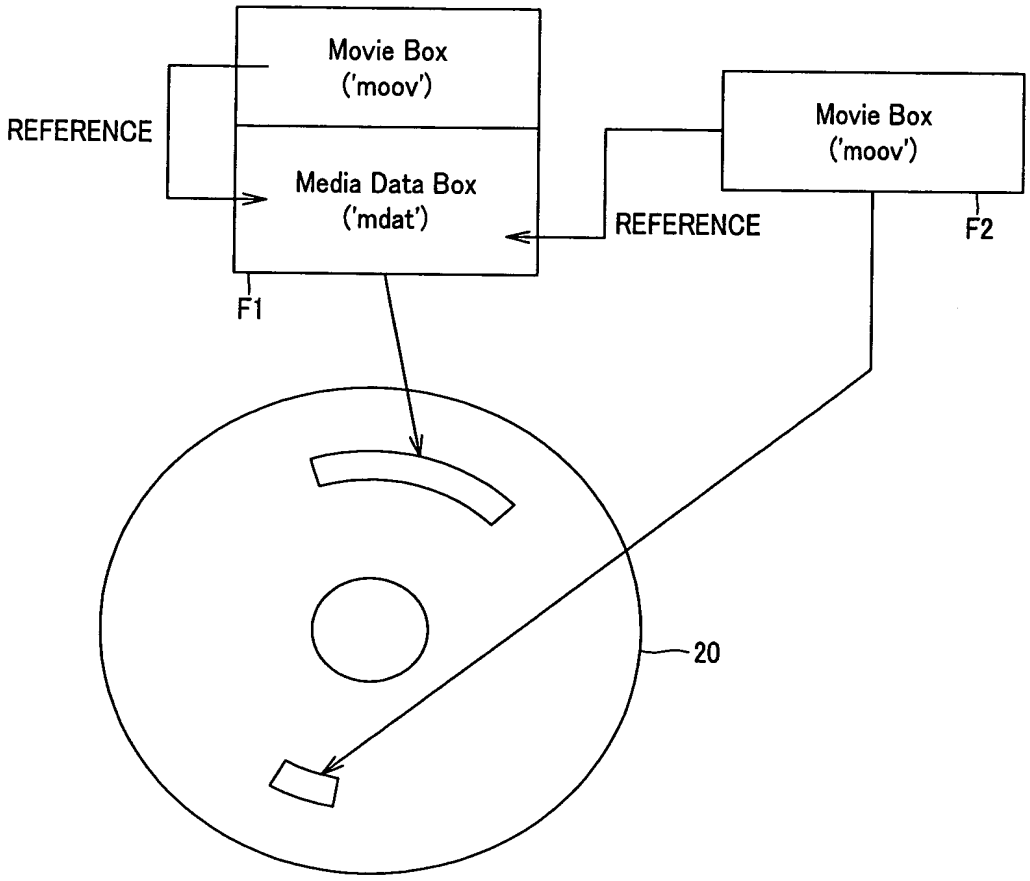

Movie Box
('moov')
REFERENCE
Media Data Box
('mdat')
F1
Movie Box
('moov')
REFERENCE
F2
20

FIG.2

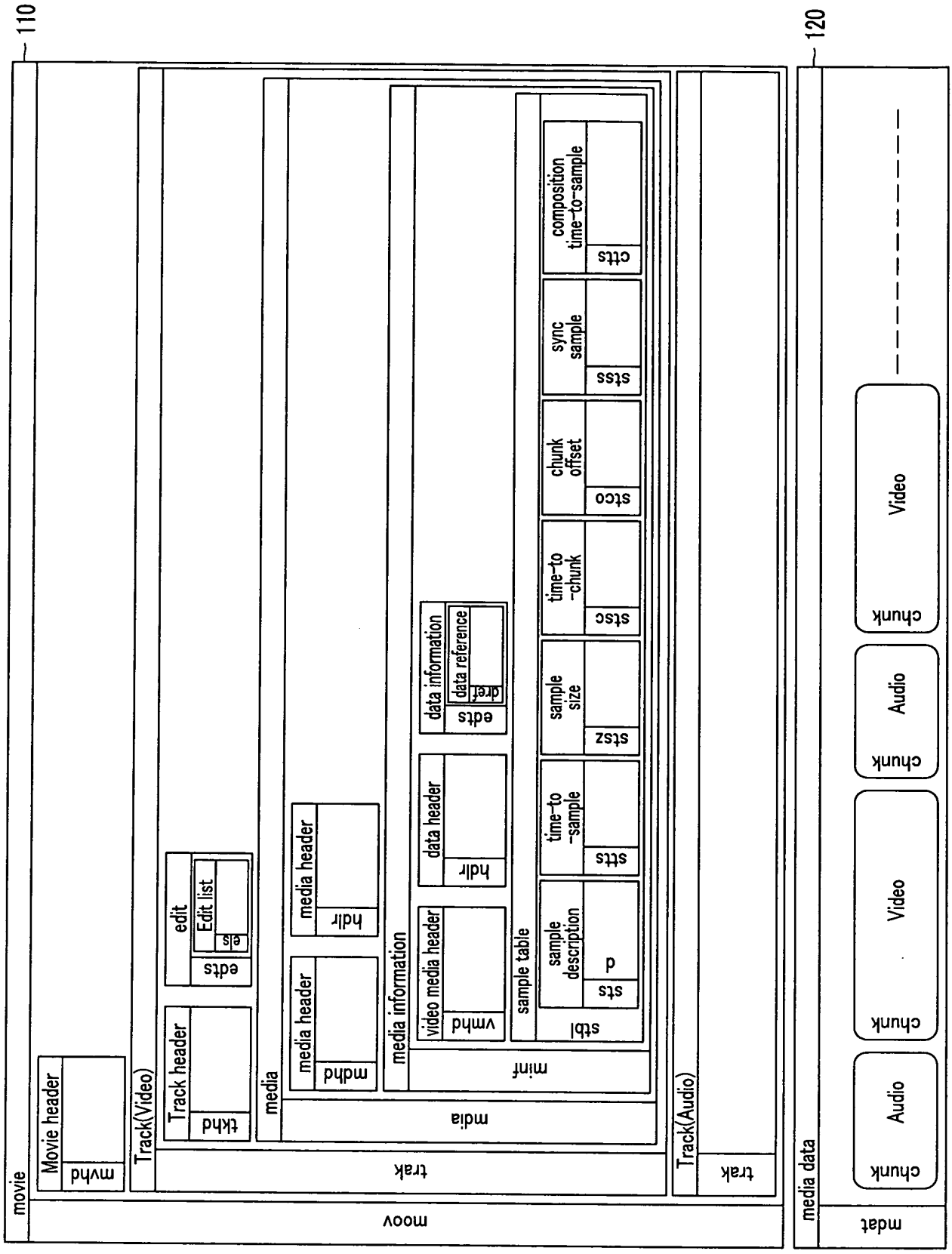

110
movie
mvhd
Movie header
Track(Video)
tkhd
Track header
edts
edit
elst
Edit list
trak
mdia
mdhd
media header
hdlr
minf
vmhd
video media header
dinf
dref
data reference
data information
stbl
stsd
sample description
d
stts
time-to -sample
stsz
sample size
stsc
time-to -chunk
stco
chunk offset
stss
sync sample
ctts
composition time-to-sample
sample table
media information
moov
Track(Audio)
120
mdat
media data
chunk
Audio
Video

FIG.3

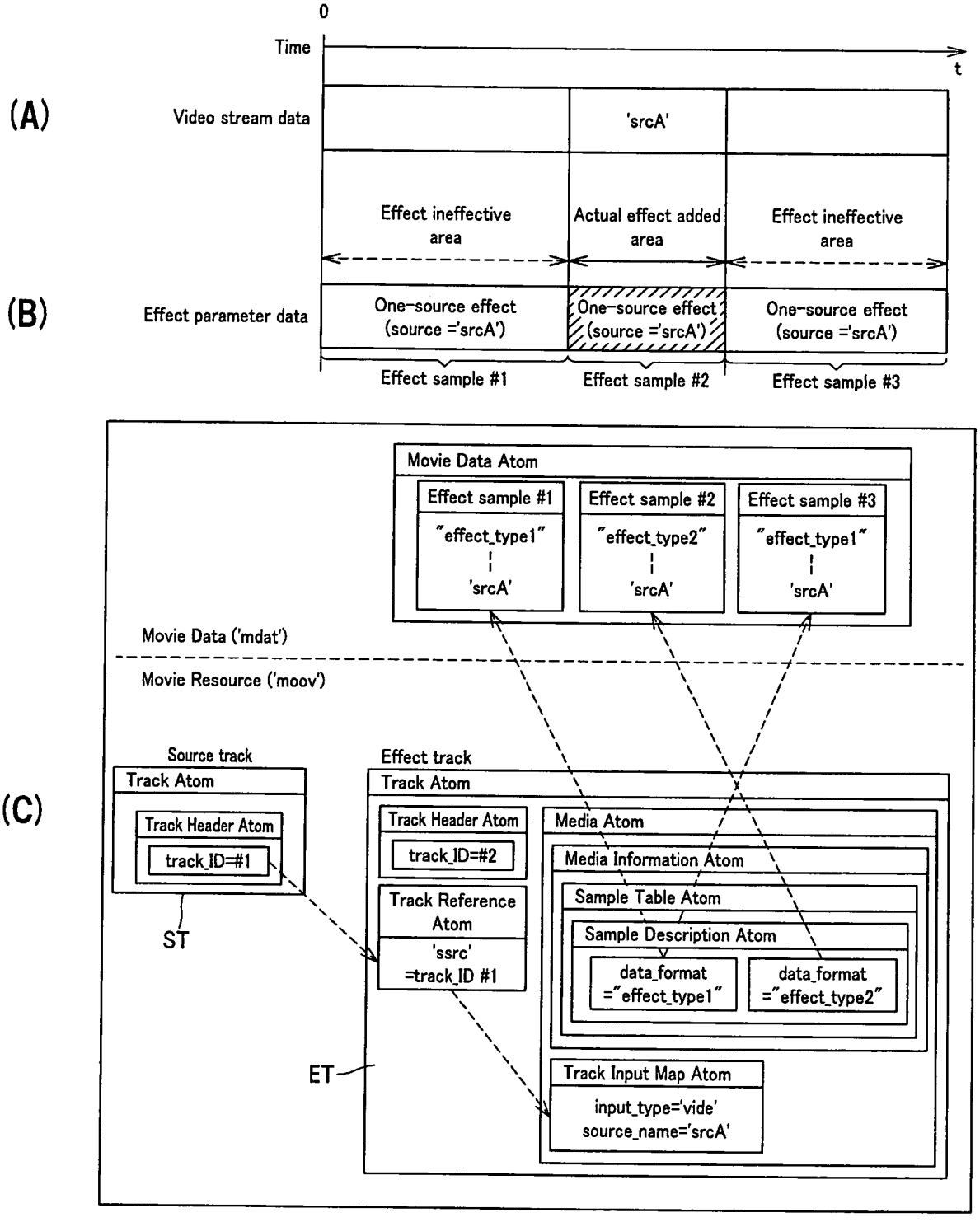

(A)
(B)
(C)
0
Time
t
Video stream data
'srcA'
Effect ineffective area
Actual effect added area
Effect ineffective area
Effect parameter data
One-source effect (source ='srcA')
One-source effect (source ='srcA')
One-source effect (source ='srcA')
Effect sample #1
Effect sample #2
Effect sample #3
Movie Data Atom
Effect sample #1
"effect_type1"
'srcA'
Effect sample #2
"effect_type2"
'srcA'
Effect sample #3
"effect_type1"
'srcA'
Movie Data ('mdat')
Movie Resource ('moov')
Source track
Track Atom
Track Header Atom
track_ID=#1
ST
Effect track
Track Atom
Track Header Atom
track_ID=#2
Track Reference Atom
'ssrc' =track_ID #1
ET
Media Atom
Media Information Atom
Sample Table Atom
Sample Description Atom
data_format ="effect_type1"
data_format ="effect_type2"
Track Input Map Atom
input_type='vide' source_name='srcA'

FIG.4

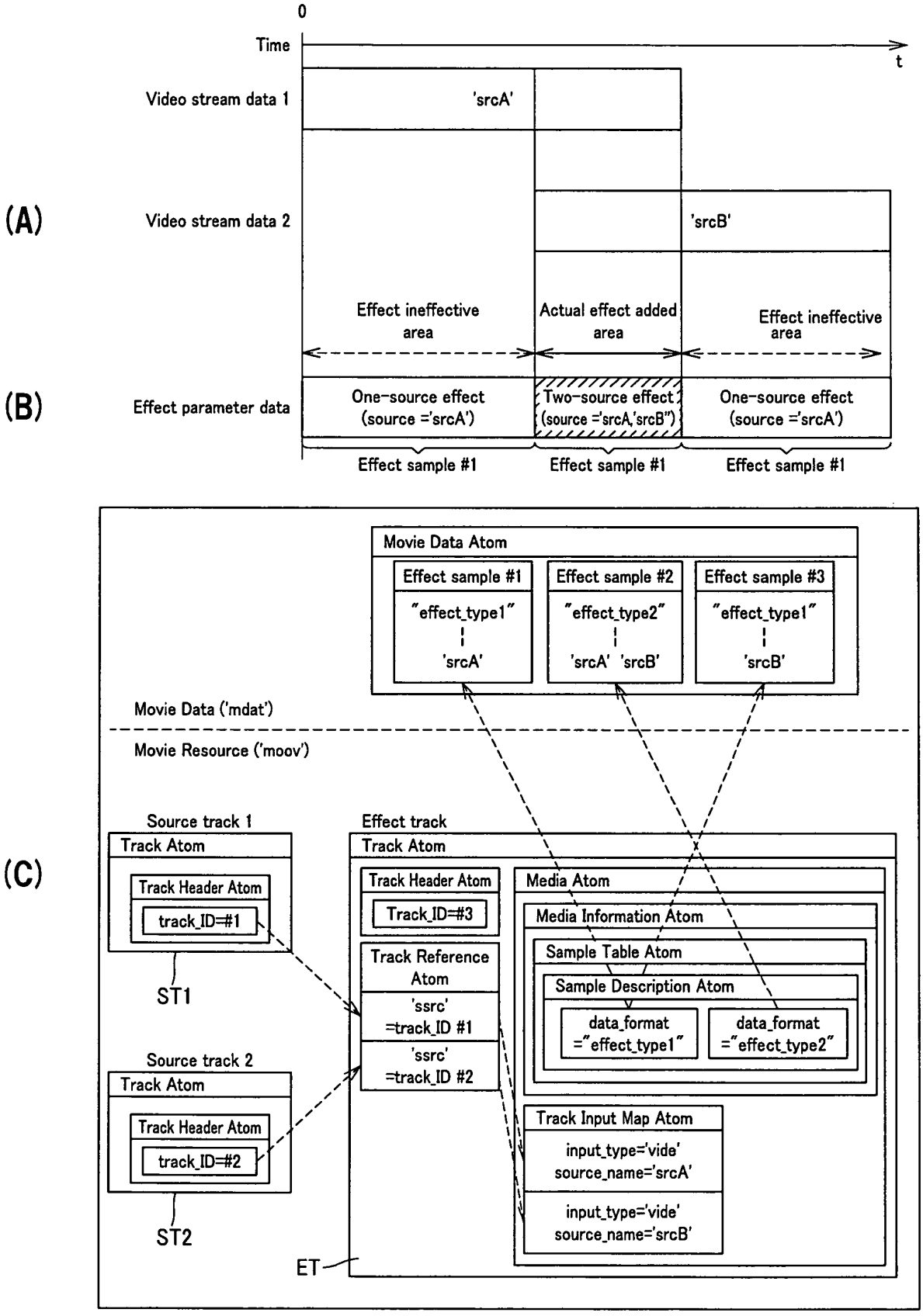

(A)
(B)
(C)
0
Time
t
Video stream data 1
'srcA'
Video stream data 2
'srcB'
Effect ineffective area
Actual effect added area
Effect ineffective area
Effect parameter data
One-source effect (source ='srcA')
Two-source effect (source ='srcA','srcB")
One-source effect (source ='srcA')
Effect sample #1
Effect sample #1
Effect sample #1
Movie Data Atom
Effect sample #1
"effect_type1"
'srcA'
Effect sample #2
"effect_type2"
'srcA' 'srcB'
Effect sample #3
"effect_type1"
'srcB'
Movie Data ('mdat')
Movie Resource ('moov')
Source track 1
Track Atom
Track Header Atom
track_ID=#1
ST1
Source track 2
Track Atom
Track Header Atom
track_ID=#2
ST2
Effect track
Track Atom
Track Header Atom
Track_ID=#3
Track Reference Atom
'ssrc' =track_ID #1
'ssrc' =track_ID #2
Media Atom
Media Information Atom
Sample Table Atom
Sample Description Atom
data_format ="effect_type1"
data_format ="effect_type2"
Track Input Map Atom
input_type='vide' source_name='srcA'
input_type='vide' source_name='srcB'
ET

FIG.5

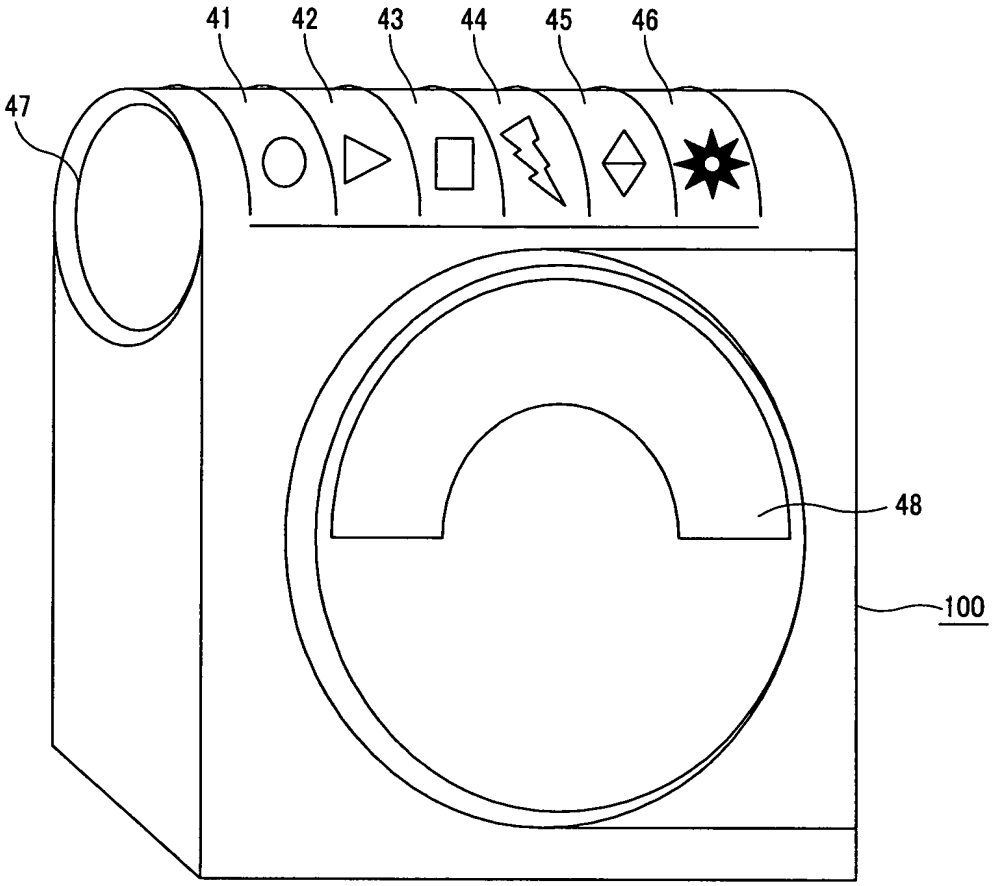


FIG.6

EFFECT PERIOD TABLE

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:01:00
Effect_2	Param_2	00:03:00	00:01:00

FIG.7

FIG.8A

	START TIME	DURATION
Effect_1	00:01:00	00:03:00
Effect RELEASE	00:02:00	00:01:00
Effect_2	00:02:00	00:01:00

FIG.8B

	START TIME	DURATION
Effect_1	00:01:00	00:01:00
Effect_1	00:03:00	00:01:00
Effect_2	00:02:00	00:01:00

FIG.8C

	START TIME	DURATION
Effect_1	00:01:00	00:02:00
Effect_2	00:02:00	00:01:00

FIG.8D

TABLE 1

	START TIME	DURATION
Effect_1	00:01:00	00:02:00

TABLE 2

	START TIME	DURATION
Effect_2	00:02:00	00:01:00

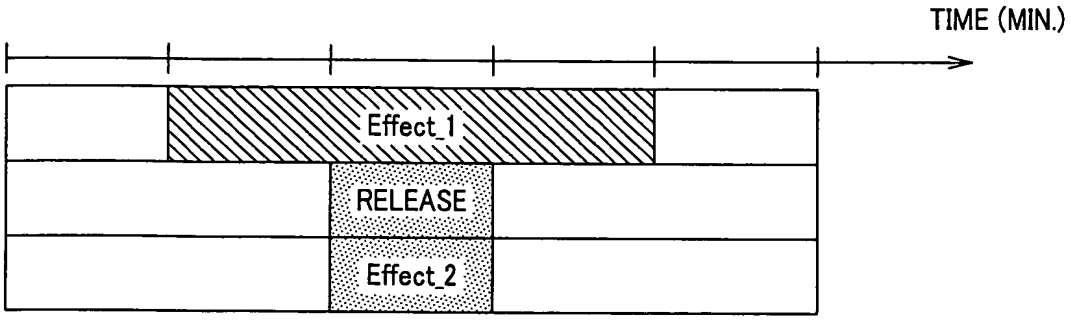


FIG.9A

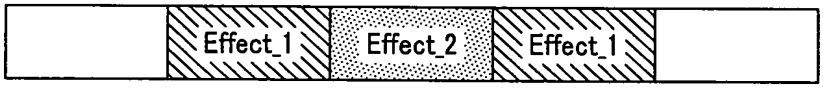


FIG.9B

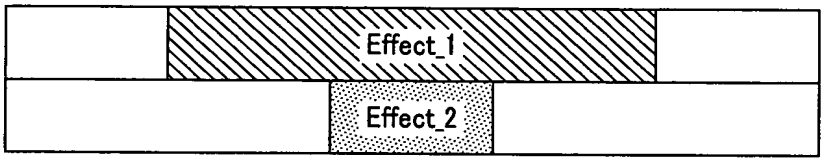


FIG.9C

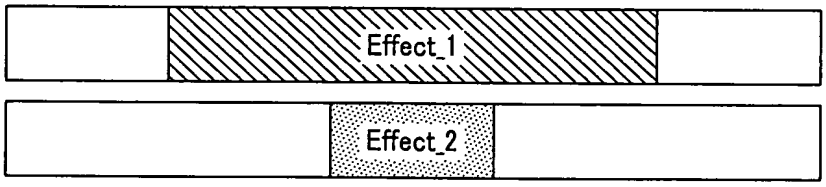


FIG.9D

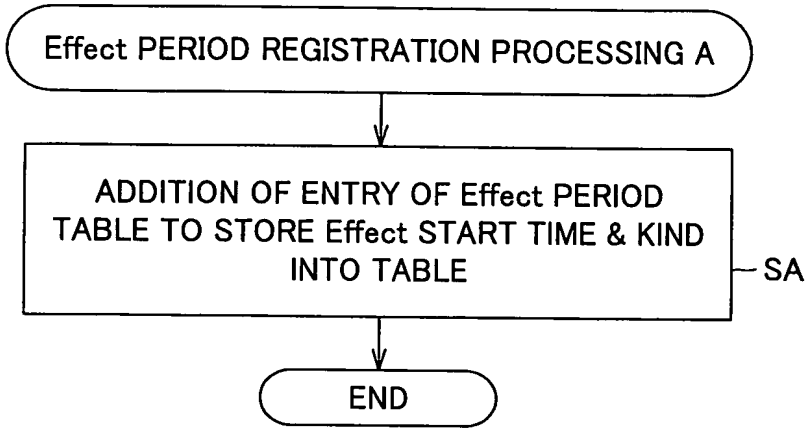


FIG.10

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	.....

FIG.11

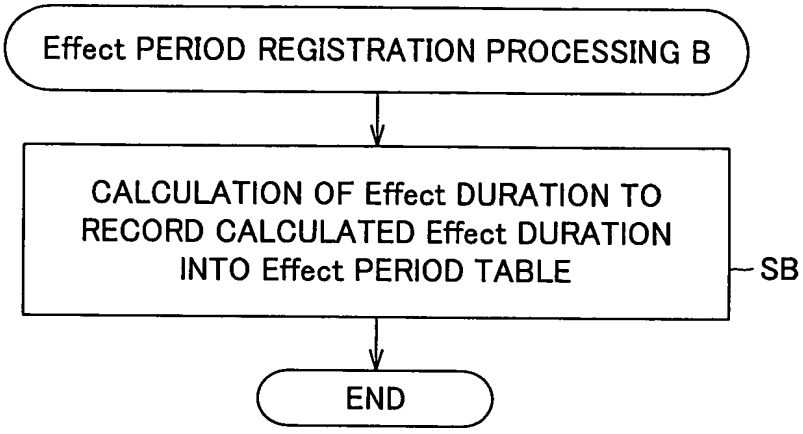


FIG.12

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:01:00

FIG.13

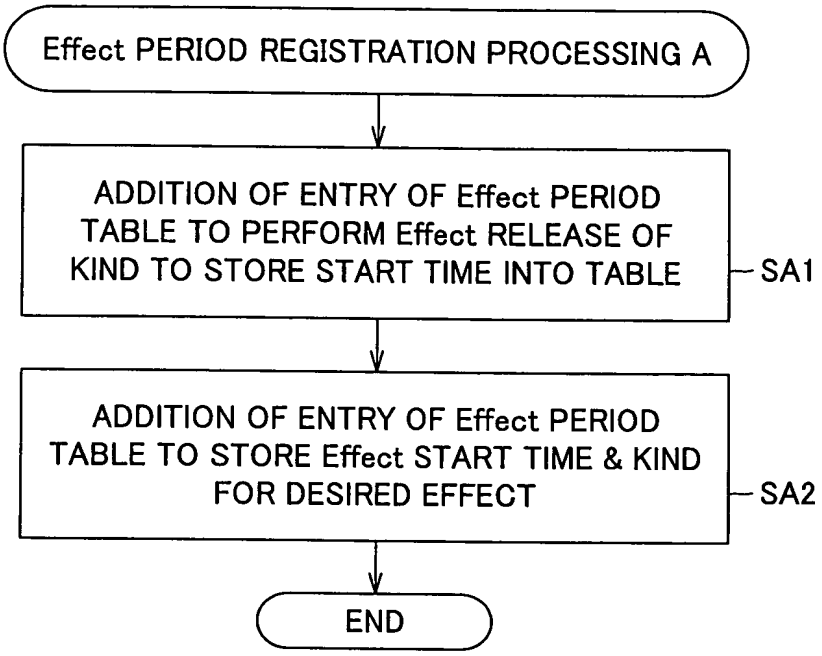


FIG. 14

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect RELEASE		00:01:00	.....
Effect_1	Param_1	00:01:00	.....

FIG. 15

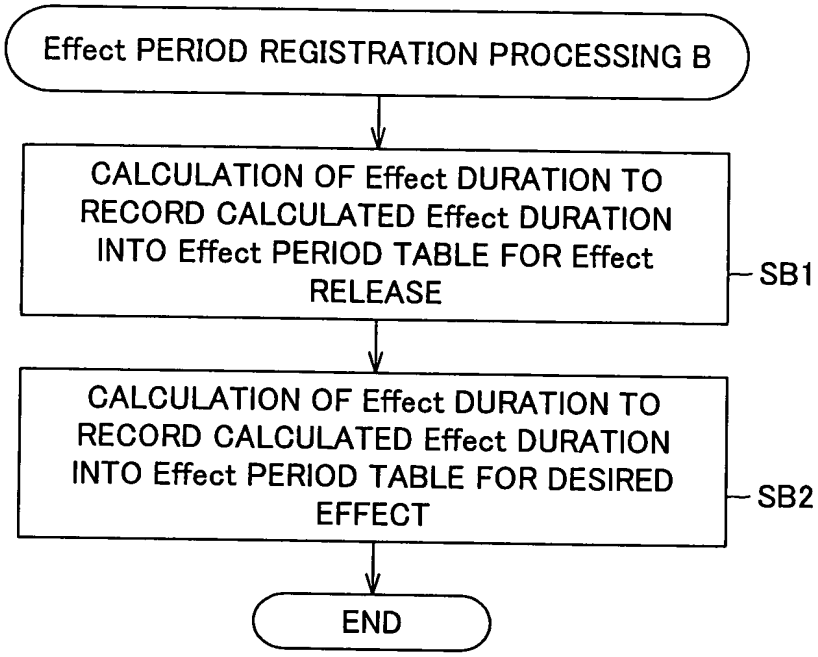


FIG.16

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect RELEASE		00:01:00	00:01:00
Effect_1	Param_1	00:01:00	00:01:00

FIG.17

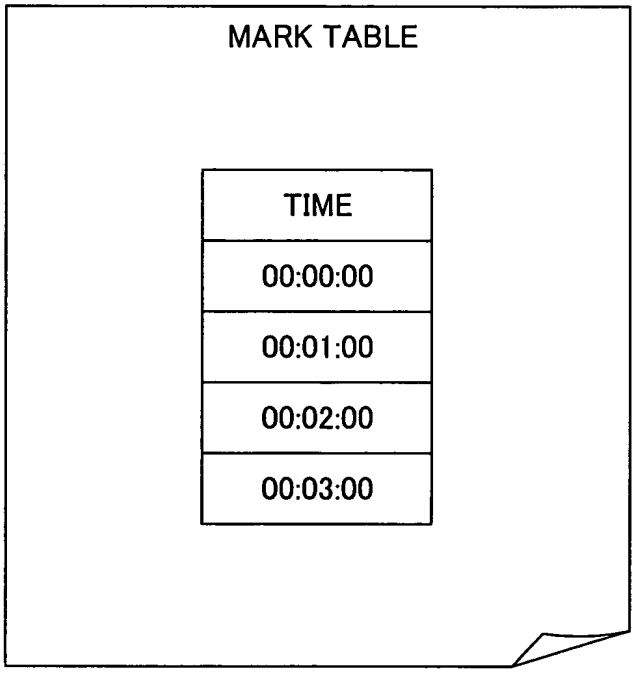


FIG.18

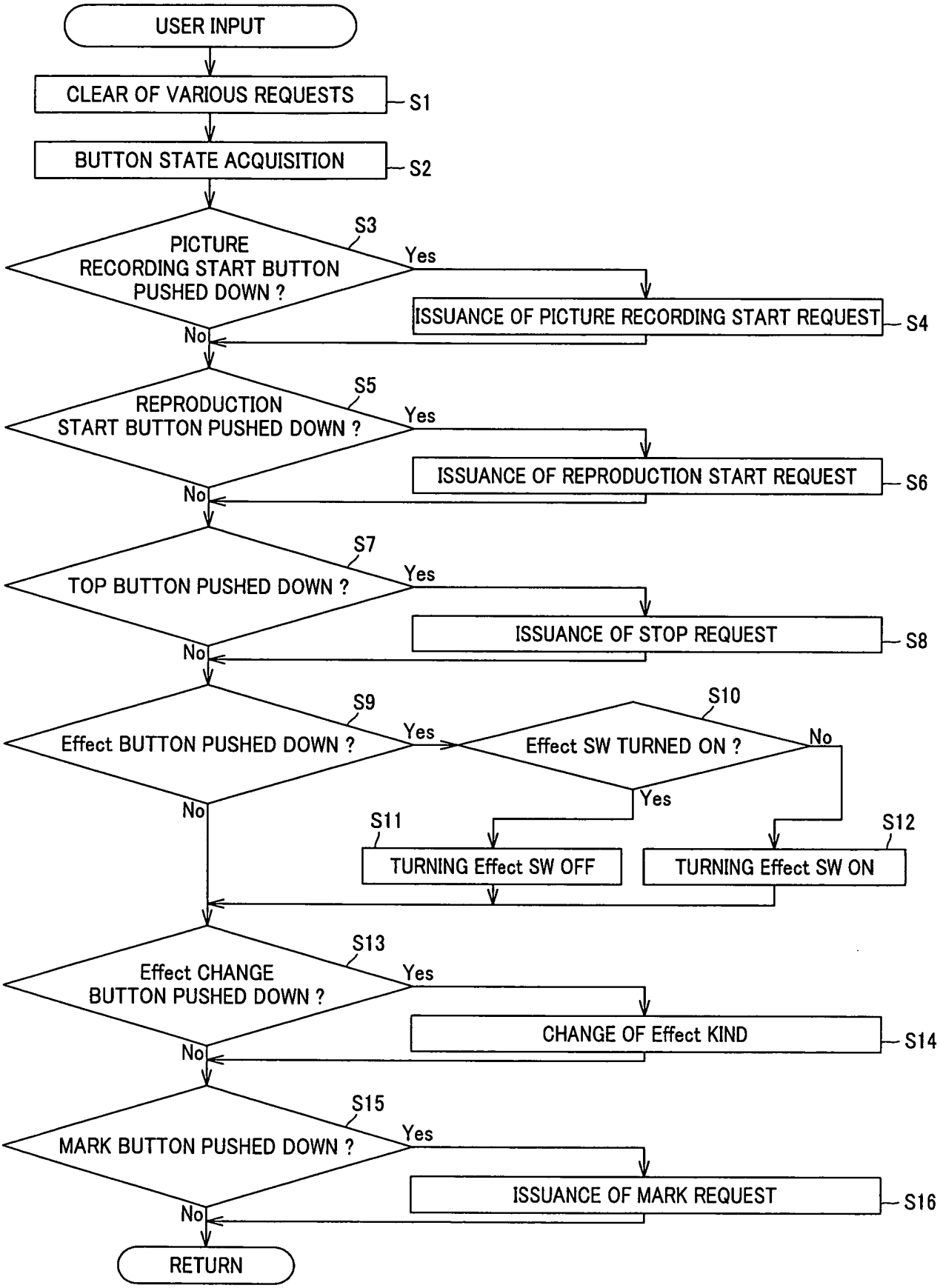

USER INPUT
CLEAR OF VARIOUS REQUESTS
S1
BUTTON STATE ACQUISITION
S2
S3
PICTURE RECORDING START BUTTON PUSHED DOWN ?
Yes
ISSUANCE OF PICTURE RECORDING START REQUEST
S4
No
S5
REPRODUCTION START BUTTON PUSHED DOWN ?
Yes
ISSUANCE OF REPRODUCTION START REQUEST
S6
No
S7
TOP BUTTON PUSHED DOWN ?
Yes
ISSUANCE OF STOP REQUEST
S8
No
S9
Effect BUTTON PUSHED DOWN ?
Yes
S10
Effect SW TURNED ON ?
No
Yes
No
S11
TURNING Effect SW OFF
S12
TURNING Effect SW ON
S13
Effect CHANGE BUTTON PUSHED DOWN ?
Yes
CHANGE OF Effect KIND
S14
No
S15
MARK BUTTON PUSHED DOWN ?
Yes
ISSUANCE OF MARK REQUEST
S16
No
RETURN

FIG.19

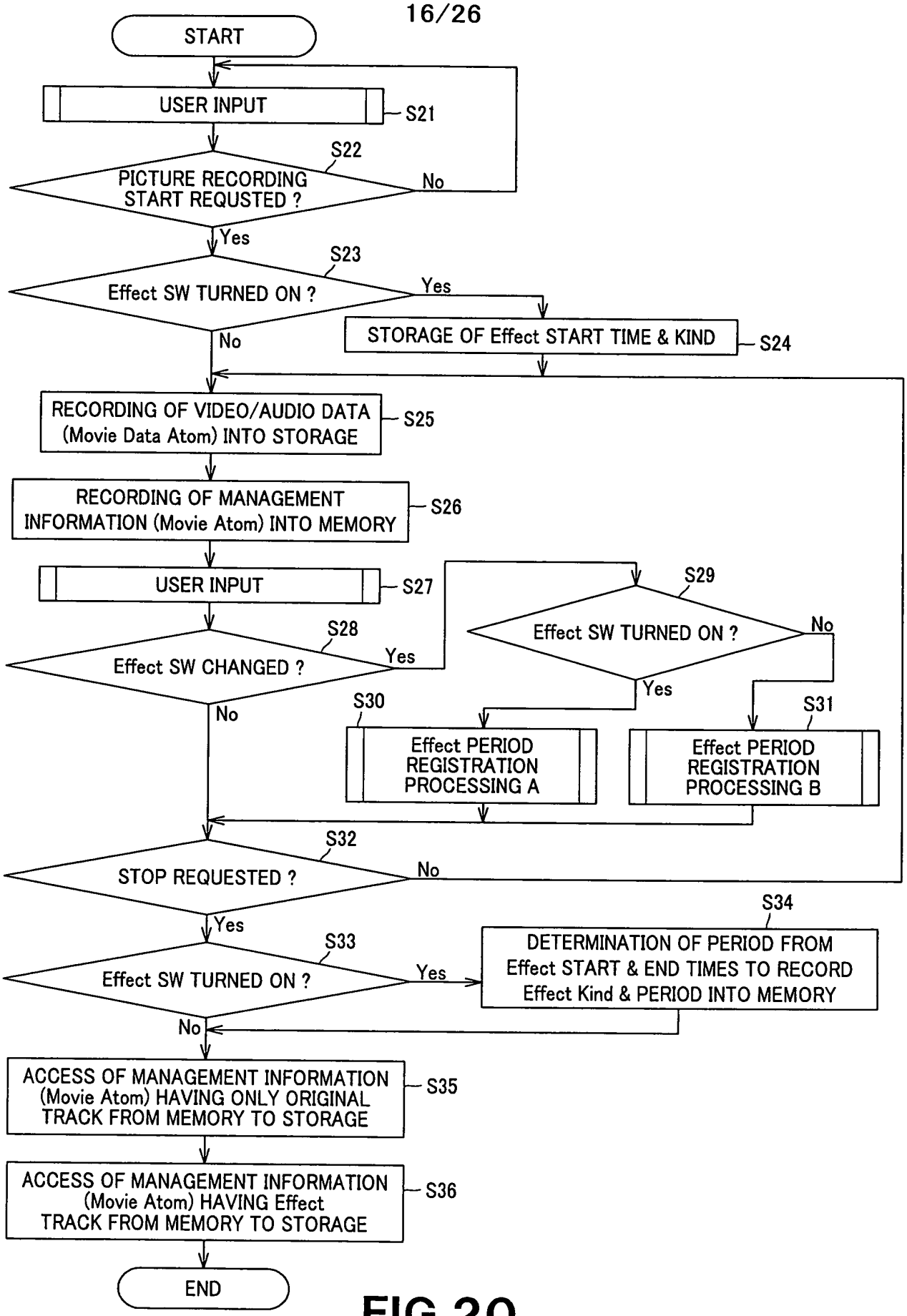

START
USER INPUT
S21
S22
PICTURE RECORDING START REQUSTED ?
No
Yes
S23
Effect SW TURNED ON ?
Yes
No
STORAGE OF Effect START TIME & KIND
S24
RECORDING OF VIDEO/AUDIO DATA (Movie Data Atom) INTO STORAGE
S25
RECORDING OF MANAGEMENT INFORMATION (Movie Atom) INTO MEMORY
S26
USER INPUT
S27
S28
Effect SW CHANGED ?
Yes
No
S29
Effect SW TURNED ON ?
No
Yes
S30
Effect PERIOD REGISTRATION PROCESSING A
S31
Effect PERIOD REGISTRATION PROCESSING B
S32
STOP REQUESTED ?
No
Yes
S33
Effect SW TURNED ON ?
Yes
S34
DETERMINATION OF PERIOD FROM Effect START & END TIMES TO RECORD Effect Kind & PERIOD INTO MEMORY
No
ACCESS OF MANAGEMENT INFORMATION (Movie Atom) HAVING ONLY ORIGINAL TRACK FROM MEMORY TO STORAGE
S35
ACCESS OF MANAGEMENT INFORMATION (Movie Atom) HAVING Effect TRACK FROM MEMORY TO STORAGE
S36
END

FIG.20

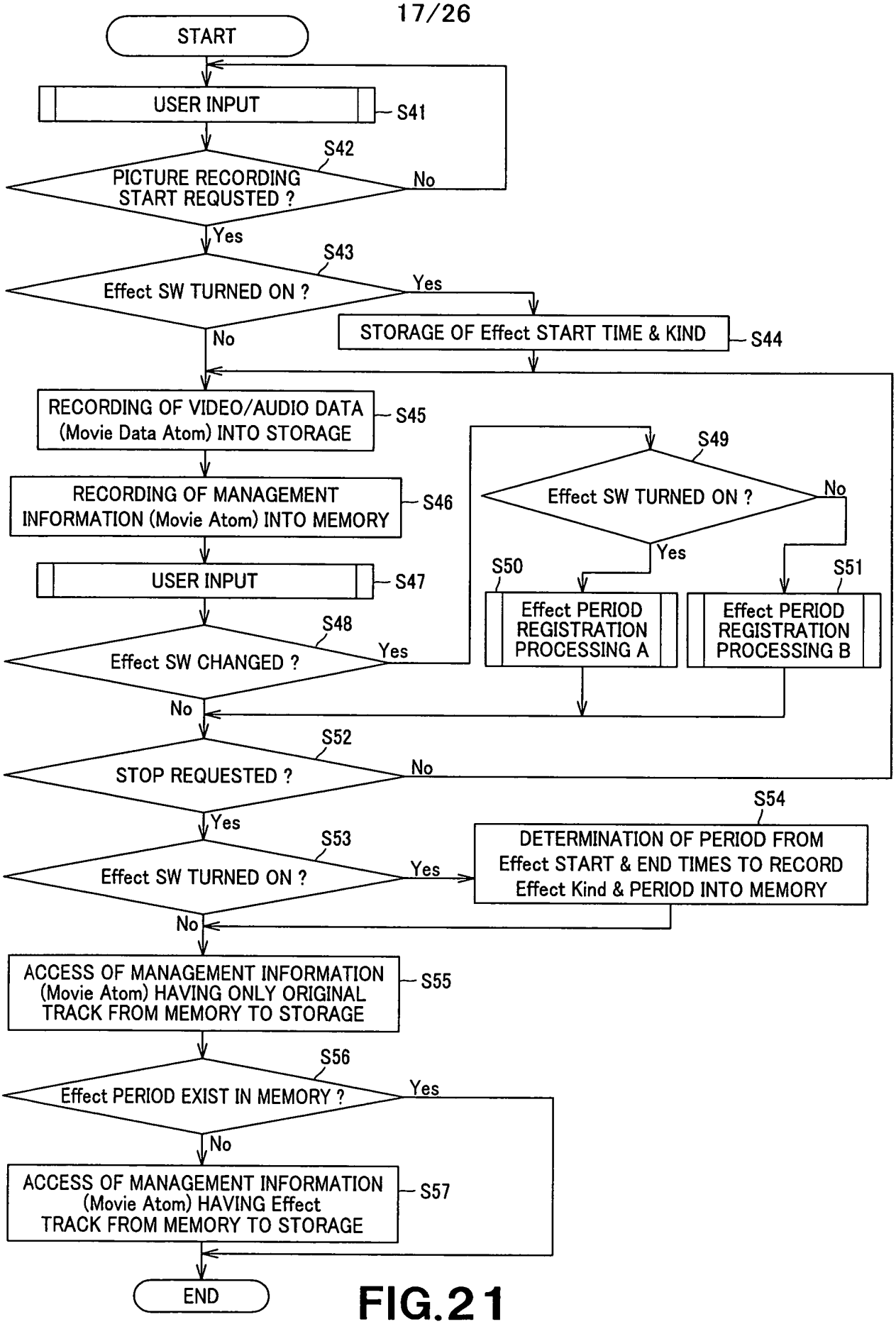

START
USER INPUT
S41
S42
PICTURE RECORDING START REQUSTED ?
No
Yes
S43
Effect SW TURNED ON ?
Yes
No
STORAGE OF Effect START TIME & KIND
S44
RECORDING OF VIDEO/AUDIO DATA (Movie Data Atom) INTO STORAGE
S45
RECORDING OF MANAGEMENT INFORMATION (Movie Atom) INTO MEMORY
S46
USER INPUT
S47
S48
Effect SW CHANGED ?
Yes
No
S49
Effect SW TURNED ON ?
No
Yes
S50
Effect PERIOD REGISTRATION PROCESSING A
S51
Effect PERIOD REGISTRATION PROCESSING B
S52
STOP REQUESTED ?
No
Yes
S53
Effect SW TURNED ON ?
Yes
No
S54
DETERMINATION OF PERIOD FROM Effect START & END TIMES TO RECORD Effect Kind & PERIOD INTO MEMORY
ACCESS OF MANAGEMENT INFORMATION (Movie Atom) HAVING ONLY ORIGINAL TRACK FROM MEMORY TO STORAGE
S55
S56
Effect PERIOD EXIST IN MEMORY ?
Yes
No
ACCESS OF MANAGEMENT INFORMATION (Movie Atom) HAVING Effect TRACK FROM MEMORY TO STORAGE
S57
END

FIG.21

FIG.22A

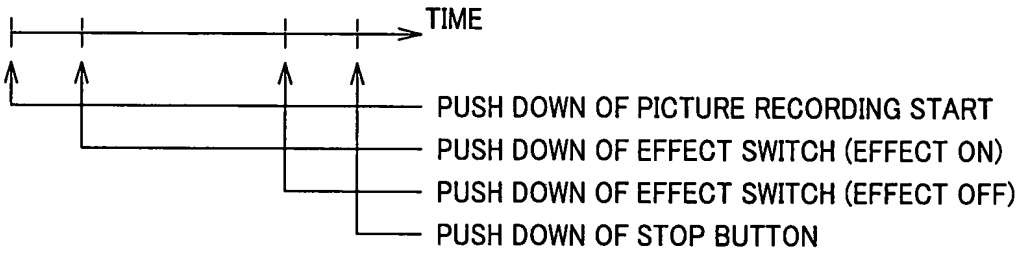


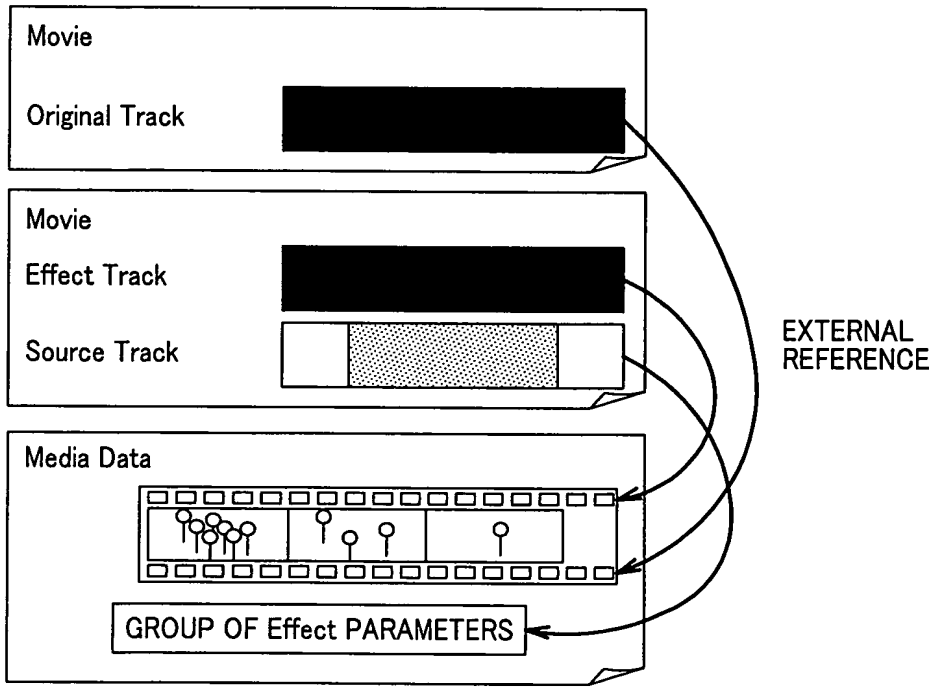
FIG.22B

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:03:00

FIG.22C

FIG.22D

FIG.22E



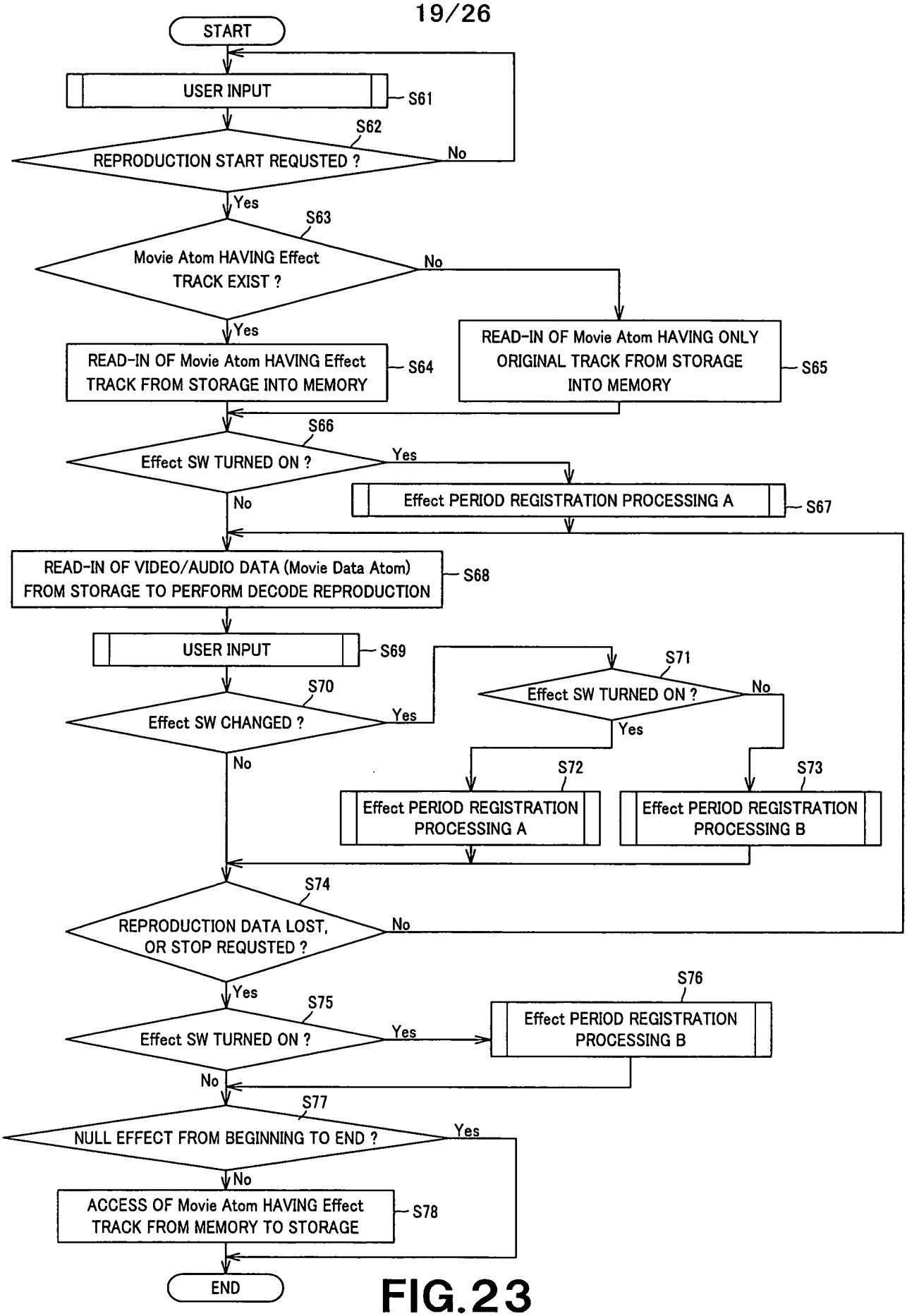

START
USER INPUT
S61
S62
REPRODUCTION START REQUSTED ?
No
Yes
S63
Movie Atom HAVING Effect TRACK EXIST ?
No
Yes
READ-IN OF Movie Atom HAVING Effect TRACK FROM STORAGE INTO MEMORY
S64
READ-IN OF Movie Atom HAVING ONLY ORIGINAL TRACK FROM STORAGE INTO MEMORY
S65
S66
Effect SW TURNED ON ?
Yes
No
Effect PERIOD REGISTRATION PROCESSING A
S67
READ-IN OF VIDEO/AUDIO DATA (Movie Data Atom) FROM STORAGE TO PERFORM DECODE REPRODUCTION
S68
USER INPUT
S69
S70
Effect SW CHANGED ?
Yes
No
S71
Effect SW TURNED ON ?
No
Yes
S72
Effect PERIOD REGISTRATION PROCESSING A
S73
Effect PERIOD REGISTRATION PROCESSING B
S74
REPRODUCTION DATA LOST, OR STOP REQUSTED ?
No
Yes
S75
Effect SW TURNED ON ?
Yes
S76
Effect PERIOD REGISTRATION PROCESSING B
No
S77
NULL EFFECT FROM BEGINNING TO END ?
Yes
No
ACCESS OF Movie Atom HAVING Effect TRACK FROM MEMORY TO STORAGE
S78
END

FIG.23

FIG.24A

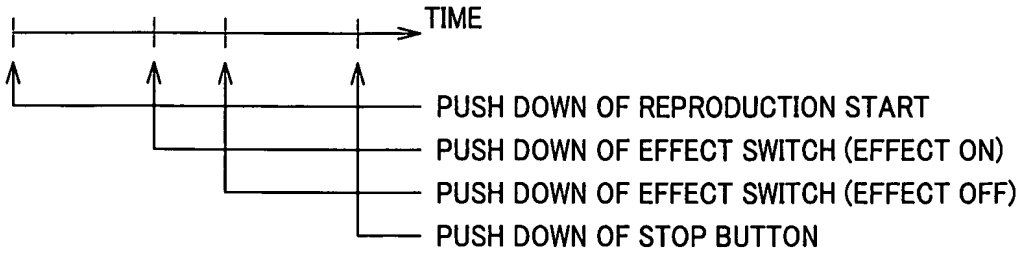


FIG.24B

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:03:00

FIG.24C

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:03:00
Effect_2	Param_2	00:02:00	00:01:00

ENTRY ADDED DURING REPRODUCTION

FIG.24D

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:03:00

ENTRY EXISTING FROM BEGINNING

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_2	Param_2	00:02:00	00:01:00

ENTRY ADDED DURING REPRODUCTION

FIG.25A

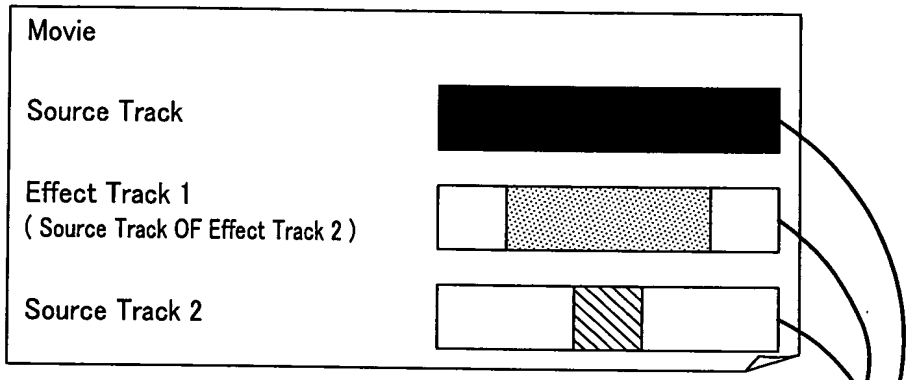
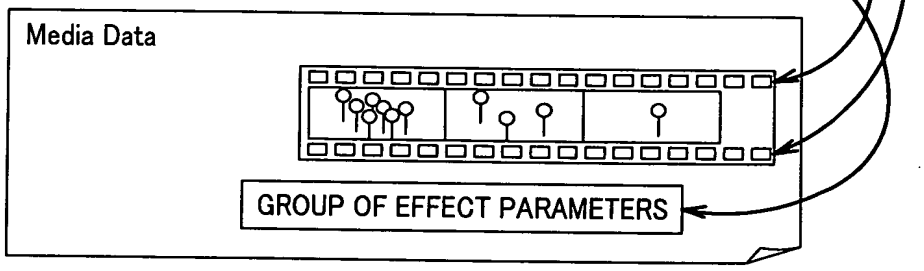


FIG.25B



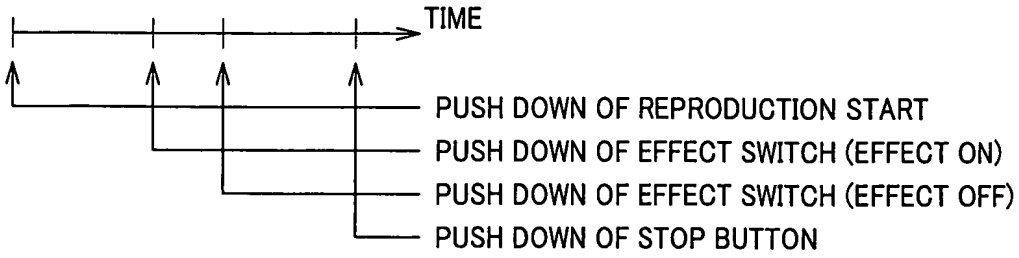


FIG.26A

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:03:00

FIG.26B

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION	
Effect_1	Param_1	00:01:00	00:02:00	
Effect解除		00:03:00	00:04:00	ENTRY ADDED DURING REPRODUCTION
Effect_2	Param_2	00:02:00	00:03:00	

FIG.26C

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION	
Effect_1	Param_1	00:01:00	00:02:00	DIVIDED ENTRY
Effect_1	Param_1	00:03:00	00:04:00	DIVIDED ENTRY
Effect_2	Param_2	00:02:00	00:03:00	ENTRY ADDED DURING REPRODUCTION

FIG.26D

FIG.27A

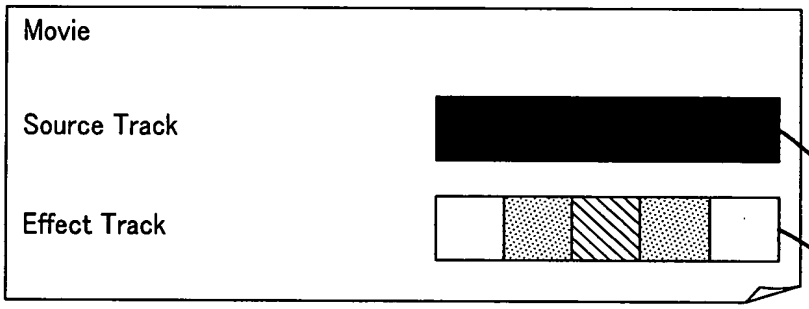
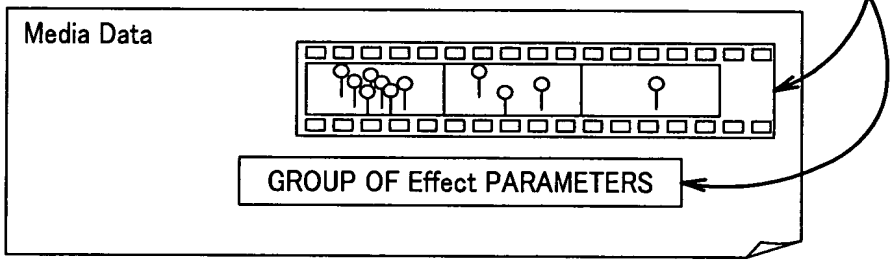


FIG.27B



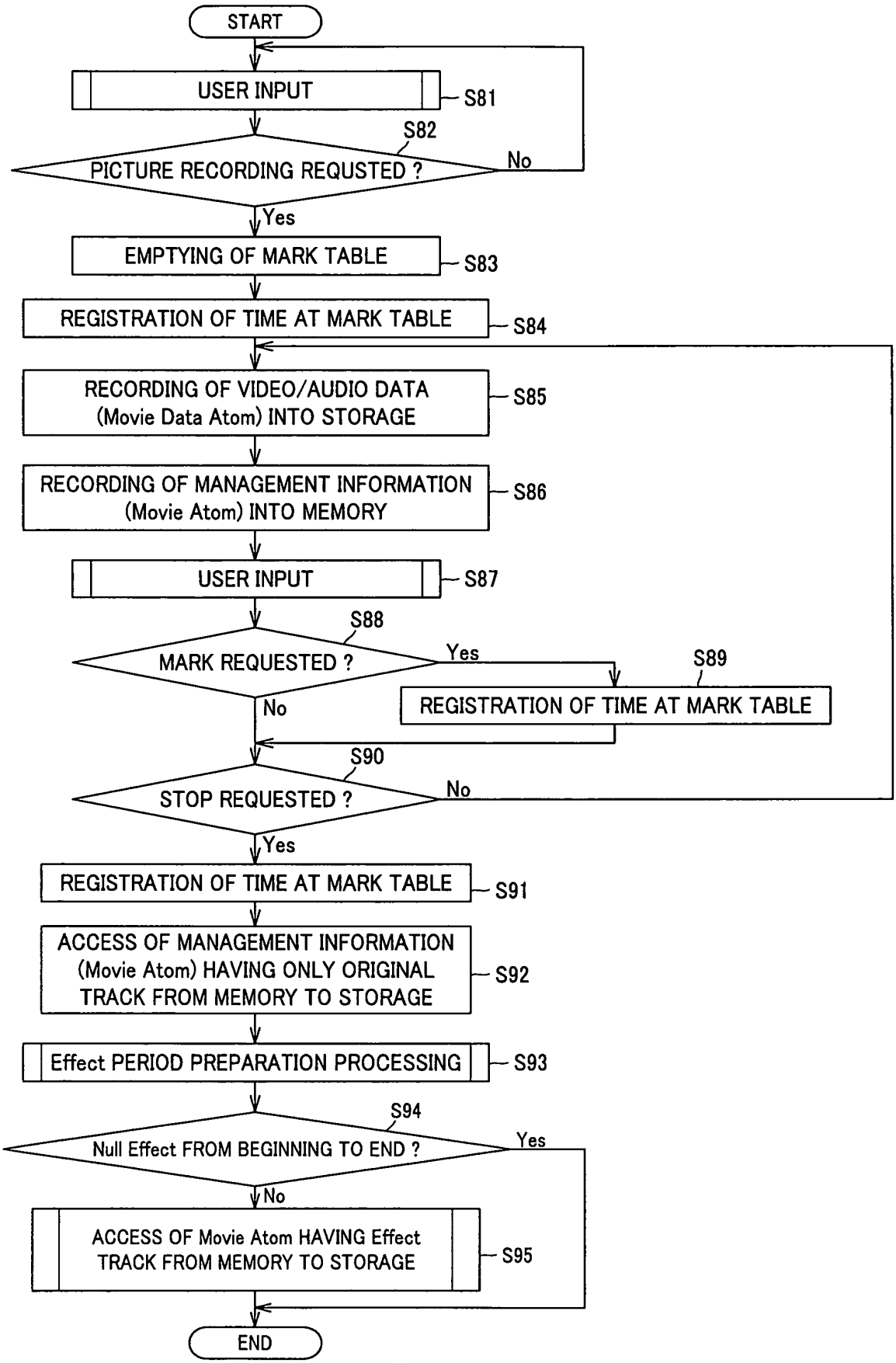

START
USER INPUT
S81
S82
PICTURE RECORDING REQUSTED ?
No
Yes
EMPTYING OF MARK TABLE
S83
REGISTRATION OF TIME AT MARK TABLE
S84
RECORDING OF VIDEO/AUDIO DATA (Movie Data Atom) INTO STORAGE
S85
RECORDING OF MANAGEMENT INFORMATION (Movie Atom) INTO MEMORY
S86
USER INPUT
S87
S88
MARK REQUESTED ?
Yes
S89
REGISTRATION OF TIME AT MARK TABLE
No
S90
STOP REQUESTED ?
No
Yes
REGISTRATION OF TIME AT MARK TABLE
S91
ACCESS OF MANAGEMENT INFORMATION (Movie Atom) HAVING ONLY ORIGINAL TRACK FROM MEMORY TO STORAGE
S92
Effect PERIOD PREPARATION PROCESSING
S93
S94
Null Effect FROM BEGINNING TO END ?
Yes
No
ACCESS OF Movie Atom HAVING Effect TRACK FROM MEMORY TO STORAGE
S95
END

FIG.28

FIG.29A

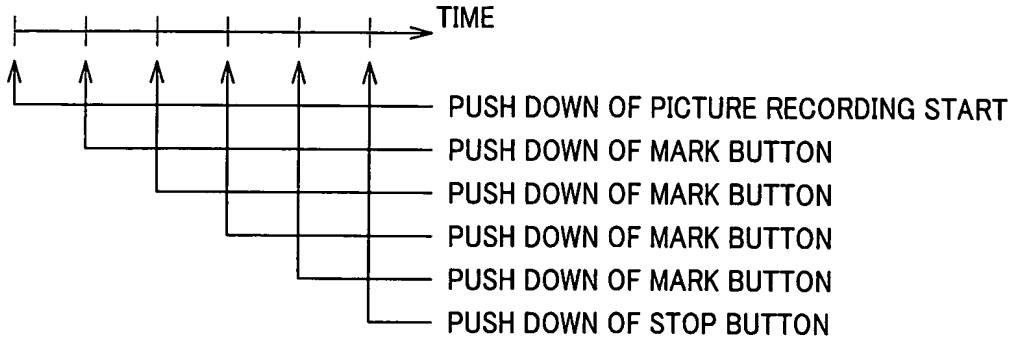


FIG.29B

MARK TABLE

TIME
00:00:00
00:01:00
00:02:00
00:03:00
00:04:00
00:05:00

FIG.29C

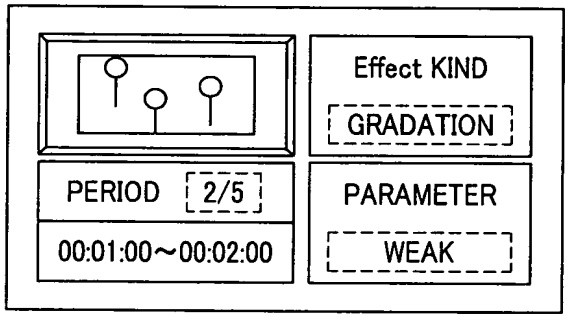


FIG.29D

EFFECT KIND	EFFECT PARAMETER	START TIME	DURATION
Effect_1	Param_1	00:01:00	00:01:00
Effect_2	Param_2	00:03:00	00:01:00

FIG.30A

FIG.30B

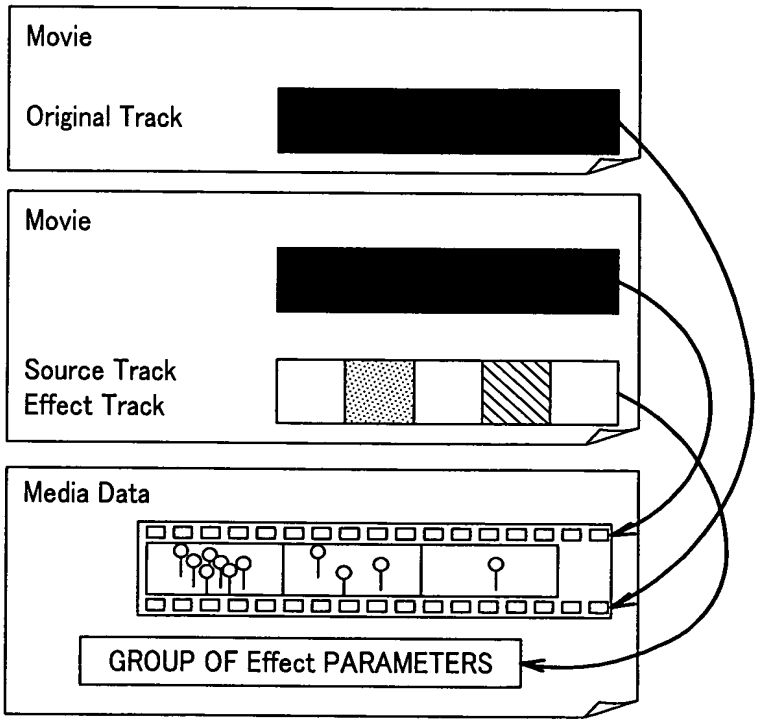



FIG.30C